

NIH AIDS Research Program Evaluation

**AD HOC PANEL ON COMPLEMENTARY AND ALTERNATIVE
MEDICINE THERAPIES RESEARCH**

Findings and Recommendations

Panel Members

Kiyoshi Kuromiya, *Co-Chair*

Critical Path Project

Wayne Jonas, M.D., *Co-Chair*

Office of Alternative Medicine, NIH

Mark Feinberg, M.D., Ph.D., *Co-Executive Secretary*

Office of AIDS Research, NIH

Paul Gaist, M.P.H., *Co-Executive Secretary*

Office of AIDS Research, NIH

Donald Abrams, M.D.

San Francisco General Hospital/UCSF

Ronald Baker, Ph.D.

San Francisco AIDS Foundation

Carola Burroughs

Holistic Connections

Misha Cohen, O.M.D., L.Ac.

San Francisco, California

Leonard Herzenberg, Ph.D.

Department of Genetics, Stanford University

John James

AIDS Treatment News

Michael Onstott

National AIDS Nutrient Bank

Mary Romeyn, M.D.

San Francisco, California

Leanna Standish, N.D., Ph.D.

AIDS Research Center/Bastyr University

OAR Staff Support

Kim Tran, Program Assistant

Table of Contents

Introduction	1
---------------------------	---

Recommendations	2
------------------------------	---

Appendixes

- A. Biographies of Panel Members
- B. Panel Members and Affiliations

Introduction

During the initial years of the HIV epidemic, few conventional treatments were available to successfully treat HIV infection and its associated diseases. As a result, significant interest in complementary and alternative medicine (CAM) therapies for HIV disease emerged, and the use of these therapies became widespread among HIV-infected people. Interest in CAM therapies has continued to the present day. Research indicates that over half of all HIV-infected gay/bisexual men are using or have used CAM therapies (Anderson et al., 1993; O'Connor et al., 1992). Some estimates of the use of alternative medicine among HIV-infected adults are as high as 78 percent (Mason, 1995). The use of CAM therapies is not unique to HIV, as evidenced by a lead article in *The New England Journal of Medicine*, which reported on the prevalence, costs, and patterns of use of unconventional medicine in the United States (Eisenberg et al., 1993). The authors conducted a survey of 1,539 adults and found that 34 percent of those surveyed reported using one or more forms of alternative medicine. Despite their widespread use, most of the CAM therapies used by HIV-infected and other individuals are self-administered and have not undergone adequate research evaluation.

The Panel believes it is important that NIH focus attention on CAM therapies for HIV for the following reasons:

1. The use of CAM therapies by HIV-infected individuals is widespread and appears to be on the increase, yet the medical and scientific community knows little about either the safety or efficacy of most of these CAM treatments. In addition, the media, the health products industry, advertisers, and others often make unsubstantiated, occasionally outrageous, and sometimes intriguing claims of efficacy for a variety of agents, modalities, and devices. Such claims rarely are examined in a rigorous scientific fashion.
2. CAM therapies may have potential benefit in the treatment of HIV/AIDS, either by themselves or in combination with conventional therapies.
3. CAM therapies may cause potential harm when used in the treatment of HIV/AIDS, either by themselves or in combination with other therapies.
4. Perceptions of the efficacy and safety of CAM therapies can affect the HIV-infected person's decisions in treatment choices (e.g., to use certain CAM therapies rather than conventional therapies or to use untested combinations of both CAM and conventional therapies).

The reasons for focusing attention on CAM therapies for HIV disease are compelling. However, individuals interested in evaluating the efficacy and encouraging the use of CAM therapies for HIV/AIDS as well as in other areas of medicine have faced a number of challenges. Barriers to conducting meaningful research on CAM include the following:

- Ambiguous definition(s) of what constitutes a CAM therapy, making surveillance of CAM therapy use difficult and complicating the evaluation of CAM therapy efficacy;

- Paucity of accepted methodologies available to evaluate the efficacy of CAM therapies;
- Widespread variation in the specific uses of CAM therapies;
- Lack of accurate information concerning the prevalence of CAM therapy use and the specific nature of the therapies used;
- Lack of standardized CAM preparations and practices, making it difficult to conduct meaningful clinical evaluations and to provide regulatory oversight of investigational CAM agents;
- Lack of experience among many of the proponents of CAM therapies and CAM research in preparing competitive NIH (or other) grant applications;
- Limited scientific expertise concerning CAM therapies in existing Division of Research Grants (DRG) study sections; and
- Lack of commercial sponsors able to support evaluation, manufacture and regulatory approval of many CAM therapies currently used by HIV-infected persons.

To respond to these challenges, the NIH established the Office of Alternative Medicine (OAM) in the Office of the Director in 1992. The mandate from Congress to the OAM is to (1) facilitate the evaluation of alternative medical treatment modalities, (2) investigate and validate the efficacy of alternative treatments, (3) establish an information clearinghouse to exchange information with the public about alternative medicine, (4) support research training, and (5) prepare biennial reports for the Office for the Director, NIH.

The OAM is finalizing an operational definition of CAM therapies and is working to develop taxonomic categories to follow the evaluation and adoption of these therapeutic approaches. The OAM also is involved in efforts to foster evaluation of those CAM therapies that meet acceptable scientific standards.

Recommendations

- 1. The OAR should establish an ongoing advisory panel on CAM for HIV disease to help identify and distinguish therapies with apparent promise from those with potential harm. This panel should be comprised of scientists experienced in HIV and/or CAM research and individuals involved in the use of alternative therapies.**
- 2. The OAR, in collaboration with its HIV-CAM Advisory Panel, should work in partnership with the NIH Office of Alternative Medicine (OAM) to establish an operational definition of complementary and alternative therapies for HIV disease and to construct a taxonomy to categorize therapies in this area.**

- 3. Once a definition of complementary and alternative therapies is developed, the OAR should sponsor a survey on the current use of these therapies by persons living with HIV. This survey should include participants in NIH-sponsored clinical trials and natural history cohorts.**

These efforts should include collecting, collating, and reporting on the current state of NIH HIV-CAM support, including the current status of HIV-CAM research that has already been initiated by the Institutes, Centers, and Divisions (ICDs). In addition, the OAR should support the inclusion of data collected on HIV-CAM practitioners, practices, and agents in OAM's effort to evaluate the current state of the science in HIV-CAM research.

Under this effort, the Panel believes the following to be important and necessary to the successful consideration of HIV-related CAM approaches for research funding:

- An operational definition of CAM as it relates to HIV disease, collaboratively derived by the OAR, the OAM, and appropriate representatives from the HIV-affected and CAM scientific community, and used throughout the NIH in budgetary and research planning of its AIDS program;
- The identification and prioritization of HIV-CAM research approaches for agents that:
 - Are widespread in use or potentially may come into widespread use (in the United States and abroad);
 - Can be accessed easily and used by underserved populations;
 - Have large potential impact on the HIV-infected community;
 - Have extremely low or high potential harm;
 - Show scientific rationale;
 - Are potentially cost-effective or costly; and
 - Have potential for self-care.

The field of HIV-CAM research will benefit as a whole if alternative medicine investigators acquire greater familiarity with and experience in conventional medical research methodology. Further benefit also may be realized by research collaborations with established conventional HIV researchers and/or research institutions. In this manner, experienced HIV research investigators and alternative medicine practitioners and researchers would collaborate to develop protocols and conduct HIV-related interdisciplinary CAM research.

The Panel believes the following recommendations will serve to realize these goals:

- 4. The OAR and the HIV-CAM Advisory Panel should work in partnership with the OAM to sponsor workshops on the research methods appropriate for the evaluation of CAM therapies for HIV disease. The utility of available methods and their limitations should be reviewed, and approaches to strengthen their scientific basis should be identified. Participants in these workshops should include representatives from OAR, OAM, the ICDs, the Food and Drug Administration (FDA), and CAM practitioners and researchers as well as HIV-infected persons who use CAM therapies.**

The Panel suggests that the topics to be addressed during these workshops include the following:

- Pilot efficacy studies of CAM agents;
 - Large epidemiological outcome studies of CAM users as well as surveys of CAM use;
 - Trials of agents for nonlabel indication (off-label) use;
 - Randomized controlled trials of comprehensive holistic programs of treatment;
 - Methods to permit evaluation of individualized programs;
 - Basic science research to define mechanisms of action of CAM agents;
 - Evaluation of nutritional interventions and wellness support; and
 - Regulatory issues concerning HIV-CAM therapy agents and devices.
- 5. The OAR should help facilitate linkages between persons interested in the evaluation of CAM therapies for HIV disease and investigators with experience in designing clinical trials or laboratory investigations.**
 - 6. The OAR should, where appropriate, work with and provide supplemental funding to support OAM research activities and program goals in the area of HIV disease.**

One factor that has historically ensured the high quality of research supported by the NIH is the peer review process. Peer reviewers have a major role in shaping the general direction and maximizing the quality of all NIH-sponsored research. How well the NIH approaches the evaluation of HIV-related CAM research proposals will be an important determinant of the advancement of the CAM research field, and it is likely to have a major influence on attitudes toward HIV-related alternative medicine research in the United States.

- 7. The OAR should work with the OAM to sponsor workshops to educate individuals interested in the evaluation of candidate CAM therapies for HIV disease about the preparation of NIH grant applications and the processes by which such applications are evaluated.**

8. **The OAR should work with the OAM and the DRG to suggest individuals who may serve as ad hoc members of study sections that are considering applications concerning CAM therapies for HIV disease. Criteria for the selection of ad hoc study section members should include those currently used by DRG as well as experience in the scientific evaluation of novel therapeutic approaches and a familiarity with the concepts and practices of CAM therapies.**

References

Anderson WH, et al., "Patient use and assessment of conventional and alternative therapies for HIV infection and AIDS," *AIDS* 1993, 74:561-564.

O'Connor BB, Lazar JS, Anderson WH, "Ethnographic study of HIV alternative therapies," poster, VIII International Conference on AIDS, 1992.

Mason F, The Complementary Treatments Project Treatment Survey, 1995, Toronto, ON, Canada.

Eisenberg D, et al., "Unconventional medicine in the United States: Prevalence, costs and patterns of use," *New Engl J Med* 1993, 328(4):248-252.

Appendix A

Biographies of Panel Members

Kiyoshi Kuromiya has been the editor and publisher of a treatment newsletter, *Critical Path AIDS Project*, since 1989. He also operates a number of electronic services in Philadelphia, including a 24-hour AIDS treatment hotline, a free Internet gateway, and a comprehensive World Wide Web homepage on AIDS. Mr. Kuromiya also serves on the faculty of the AIDS Educational Training Centers, the National Advisory Board of the National Minority AIDS Council, and the advisory board for HIV Cost and Services Utilization Survey (HCSUS), a project of Rand Corporation and the Agency for Health Care Policy and Research. As a community constituency representative of both the AIDS Clinical Trials Group and the Terry Bein Community Programs for Clinical Research on AIDS networks, he has been an advocate for access to treatments and treatment information (including both conventional and complementary regimens) for underserved communities such as Asian-Pacific Islanders and other persons of color, incarcerated persons, and women. Mr. Kuromiya also has been active in Ryan White CARE Act programs on the local, State, and national levels. Mr. Kuromiya is a founding member of ACT UP/Philadelphia and has been prominently active in civil rights, gay liberation, antiwar, and human rights movements for 35 years. He has collaborated with R. Buckminster Fuller on a number of books including *Critical Path* (1981) and *Cosmography* (1992), which was published after Fuller's death.

Wayne B. Jonas, M.D., has served as the Director of the Office of Alternative Medicine (OAM) at the National Institutes of Health since July 1995. The OAM was established in 1992 to evaluate and investigate complementary, alternative, and unconventional medical practices using appropriate, high-quality scientific methods; to coordinate and facilitate research and research training activities in complementary, alternative, and unconventional medical areas; and to disseminate that information to the public. As a member of the teaching staff of the Family Practice Residency Program at DeWitt Army Community Hospital in Fort Belvoir, VA, Dr. Jonas holds faculty appointments in the Departments of Family Practice and Preventive Medicine/Biometrics at the Uniformed Services University of the Health Sciences in Bethesda, MD, where he co-directs a year-long seminar on complementary medicine. Dr. Jonas is also a member of the International Cochrane Collaboration Group on the Quality of Randomized Clinical Trials and co-coordinator of the Cochrane Collaboration Complementary Medicine Field Group, and he is a Fellow of the American Academy of Family Physicians. Dr. Jonas received his B.A. from Davidson College in Davidson, NC, and his M.D. from Bowman Gray School of Medicine in Winston-Salem, NC. He completed his residency at DeWitt Army Community Hospital and his research training at Walter Reed Army Institute of Research in Washington, DC. Dr. Jonas served as Director of the Medical Research Fellowship at Walter Reed, where he taught research methodology and conducted laboratory research immunology and toxicology. In addition to his conventional medical training, Dr. Jonas has received training in homeopathy, bioenergy therapy, diet and nutritional therapy, mind/body methods, spiritual healing, electro-acupuncture diagnostics, and clinical pastoral education. He has conducted research in and written about a variety of research approaches and he contributed to a report to the NIH entitled "Alternative Medicine: Expanding Medical Horizons," a report about the history and current practices of alternative medicine modalities in the United States.

Donald I. Abrams, M.D., is currently a Professor of Clinical Medicine at the University of California, San Francisco, and has served as the Chairman of the Community Consortium of Bay Area HIV Health Care Providers since 1985. Dr. Abrams is also the Assistant Director, AIDS Program, at San Francisco General Hospital. Previously, she was an Associate Professor of Clinical Medicine, University of California, San Francisco, and an Associate Clinical Professor at the University's Cancer Research Institute. Dr. Abrams received his A.B. in molecular biology from Brown University at Providence, RI, and his M.D. from Stanford University School of Medicine in Stanford, CA. Dr. Abrams served as an intern and resident in internal medicine at the Kaiser Foundation Hospital in San Francisco and as a fellow in hematology/oncology at the University of California, San Francisco, Cancer Research Institute. Dr. Abrams is widely published on numerous HIV/AIDS-related subjects.

Ronald Baker, Ph.D., has served on the staff of the San Francisco AIDS Foundation since 1985 and is currently the Director of Treatment Education and Advocacy at the Foundation. Dr. Baker also is the Editor-in-Chief of the *Bulletin of Experimental Treatments for AIDS* (BETA), the AIDS treatment news magazine published quarterly by the Foundation. Dr. Baker received his undergraduate education from Louisiana State University. He received a Fulbright scholarship for study at the University of Berlin in 1965, attended graduate school at Harvard University on a Woodrow Wilson Fellowship, and earned his Ph.D. in Germanic Languages at Harvard in 1969. He served as Assistant Professor of German at Tulane University for 3 years before moving to San Francisco to pursue a career in journalism.

Carola Burroughs is a holistic health and wellness educator and consultant to the Brooklyn AIDS Task Force and others, providing education, training, and individual counseling in holistic and complementary treatment options for HIV/AIDS and other chronic disorders. Ms. Burroughs serves on the Program Advisory Council of the NIH Office of Alternative Medicine (OAM). She also served on the OAM Ad Hoc Advisory Panel and was involved in the writing of the Chantilly Report, *Alternative Medicine: Expanding Medical Horizons*. Ms. Burroughs is a member of the Board of Directors of Direct AIDS Alternative Information Resources (DAAIR), a buyers club for nutritional supplements for HIV/AIDS and, in previous years, was active in the Alternative and Complementary Treatment Working Group of the NIAID/Division of AIDS Community Programs for Clinical Research in AIDS (CPCRA), actively working on protocol design for clinical trials of complementary therapies. Ms. Burroughs also is an artist, writer, and environmental activist working with the Network for a Sustainable New York City (SUSNET). She is particularly interested in the linkages between holistic health and environmental issues. A number of her articles on holistic and complementary health approaches to HIV/AIDS treatment have appeared in the *People with AIDS Coalition NEWSLINE*, *Treatment Issues*, and elsewhere.

Misha Cohen, O.M.D., L.Ac., has been practicing Asian medicine for the past 19 years in California and New York. Presently, she is the Clinical Director of Chicken Soup Chinese Medicine in San Francisco, Research and Education Director of Quan Yin Healing Arts Center, and a Fellow to the American Academy of Oriental Medicine. She has lectured nationally and internationally on the subjects of HIV infection, chronic viral infection, and gynecology, as well as other Asian medicine topics. Dr. Cohen has conducted herbal and acupuncture research in HIV. She collaborated with physicians at San Francisco General Hospital in a double-blind,

placebo-controlled pilot clinical trial using Chinese herbal medicine for HIV-infected persons and is currently a co-investigator in a larger followup study in Zurich, Switzerland. Dr. Cohen is also co-investigator, with Dr. Arnold Abrams, in the UCSF-sponsored Community Consortium in two studies related to HIV, chronic diarrhea, and mild-to-moderate anemia. She also has created Chinese medicine treatment protocols used at Quan Yin, for PMS, infertility, hepatitis, HIV, and menopausal syndromes, and she has developed herbal formulas for HIV, chronic viral illness, cancer support, and fibromyalgia. Dr. Cohen's book, *The Chinese Way to Healing: Many Paths to Wholeness*, will be released by Putnam in 1996.

Leonard Herzenberg, Ph.D., is a Professor of Genetics at Stanford University School of Medicine in Stanford, CA. He is the Founding Editor and an Editorial Board member of *International Immunology* and a Co-Editor of the *Handbook of Experimental Immunology*. He currently serves on the advisory boards of Medinor, the AIDS Community Research Consortium (ACRC), Biological Detection Systems, Inc., Fox Chase Cancer Institute, Max-Planck Institute, and the Radiation Effects Research Foundation. Previously, Dr. Cohen served as an U.S.P.H.S. officer at the National Institutes of Health. Dr. Herzenberg received his A.B. in biology and chemistry from Brooklyn College and Ph.D. degrees in biochemistry and in immunology from the California Institute of Technology in Pasadena, CA, and the Pasteur Institute in Paris, respectively. He has been a member of the New York Academy of Sciences, the American Association of Immunologists Committee on Public Affairs, the American Association for Microbiology, and the National Academy of Sciences. He was a Guggenheim Fellow in 1976 and 1986. Dr. Herzenberg has coauthored numerous articles on HIV/AIDS and immunology.

John S. James is the founder, editor, and publisher of *AIDS Treatment News*, a twice-monthly newsletter on experimental, alternative/complementary, and mainstream treatments for HIV/AIDS. The newsletter's major focus is HIV disease, including antiviral, immune-based, nutritional, supportive, and other therapies. The newsletter also reports on treatments for opportunistic conditions and research policy issues.

Michael Onstott has been involved in the alternative health care movement for 22 years. For the last 5 years he has worked for people with HIV to secure the right to access natural and experimental therapies and medical devices. Currently he is helping coordinate the HIV alternative AIDS buyer's club, Healing Alternatives Foundation. Mr. Onstott is a long-term AIDS survivor, a writer and columnist, and a frequent speaker for the Positive Living for Us (PLUS) educational program in San Francisco and other venues on alternative therapies for HIV/AIDS. He is the former legislative chairman for San Francisco Citizens for Health. He also cofounded the National AIDS Nutrient Bank, a program to provide free and low-cost nutrients as well as seminars and educational outreach to lower income people living with HIV/AIDS. As a member of ACT UP/San Francisco, he helped coordinate two highly successful series of forums at Davies Medical Center: "Caring for HIV Naturally" and "Caring for the Immune System Naturally." Dr. Onstott worked with the National Organization for Women and the Consumer Coalition for Health Choices to guarantee the right of all individuals to choose their own health care.

Mary Romeyn, M.D., is an internist on staff at Saint Frances Memorial Hospital in San Francisco, CA. She sits on the Scientific Advisory Committees of the San Francisco AIDS Foundation and HIVCare. She has a private practice specializing in HIV and nutrition and writes and lectures on nutritional aspects of HIV disease management. Dr. Romeyn has written a new book, *Nutrition and HIV: A New Model for Treatment*, published by Joessey-Bass, October 1995.

Leanna J. Standish, N.D., Ph.D., currently serves as the Bastyr University AIDS Research Center Principal Investigator, Co-Director of the Bastyr University Research Institute, and Director of Research at Bastyr University. She is a licensed naturopathic physician with a 25-year career as a research scientist in experimental neuroscience with numerous publications. Dr. Standish is a pioneer in the integrated care of HIV-infected persons and has been researching natural AIDS treatments since 1987. She trained at the Downstate Medical Center in New York and the University of Massachusetts, where she received her doctoral degree in 1978. She completed a postdoctoral fellowship in psychopharmacology at the Yerkes Primate Research Center, co-directed the Smith College Neuroscience Program, and served for 2 years as Visiting Scientist/Senior Fellow at the University of Washington Department of Physiology and Biophysics. Currently, she is involved in both private practice and research and is about to complete her training as an acupuncturist.

Mark Feinberg, M.D., Ph.D., currently serves as the Chair of the NIH Coordinating Committee on AIDS Etiology and Pathogenesis Research. Dr. Feinberg has been engaged in basic research on the virology and pathogenesis of HIV disease since 1984. His current research activities focus on the study of host-virus relationships in pathogenic and nonpathogenic HIV and SIV infections, and on the application of emerging insights into the pathogenesis of HIV disease to the derivation of more effective therapeutic approaches for HIV-infected persons. Dr. Feinberg received his B.A. degree from the University of Pennsylvania and his M.D. and Ph.D. degrees from Stanford University. He served as an intern and resident in Internal Medicine at the Brigham and Women's Hospital, Harvard Medical School, Boston, and as a postdoctoral fellow in the laboratory of Dr. David Baltimore at the Whitehead Institute for Biomedical Research in Cambridge, MA. From 1991 to 1995, Dr. Feinberg was an Assistant Professor of Medicine and Microbiology and Immunology at the University of California, San Francisco, and Director of the UCSF Center for AIDS Research Virology Laboratory. During this period, he also served as an attending physician on the inpatient Medical and AIDS/Oncology Services and as a primary care physician in the outpatient AIDS Clinic (Ward 86) at San Francisco General Hospital. He joined the Office of AIDS Research in July 1995. Dr. Feinberg has maintained an active interest in health and science policy issues related to AIDS. He has served on the staff of the National Academy of Sciences' Committee on a National Strategy for AIDS in 1986, as a consultant for the Committee for the Oversight of AIDS Activities in 1988, and as a member of the Institute of Medicine/National Academy of Sciences' panels on "HIV and the Blood Supply" and "Needle Exchange and Bleach Distribution Programs."

Paul Gaist, M.P.H., is currently a Senior Program Analyst in the Office of AIDS Research, Office of the Director, NIH, with a primary emphasis in the behavioral and social science research areas. Among his duties, Mr. Gaist serves as a member of the NIH Alternative

Medicine ICD Coordinating Committee to the Office of Alternative Medicine. He received his M.P.H. degree in health policy and management from the Johns Hopkins University School of Hygiene and Public Health, where he is now completing his Ph.D. in behavioral and social science research. He has B.A. degrees in psychology and physiology, both from the University of California, Berkeley. Mr. Gaist has been working in the HIV/AIDS research area since 1989, having served as a senior staff member and then Deputy Director for AIDS for the former PHS agency, the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA). In 1991, he received the PHS Special Recognition Award for his role in developing the first national conference on HIV and substance abuse, emphasizing Federal/State research and services. He also received the ADAMHA Administrator's Award for his overall contributions to the HIV/AIDS field. Prior to working in HIV/AIDS, Mr. Gaist served as the Program Director and a Staff Research Psychologist for the Seasonal Affective Disorders Program in the Clinical Psychobiology Branch, National Institute of Mental Health, and as a behavioral research associate in the private sector. His publications include an article on research ethics, coauthored with Don Des Jarlais and Samuel J. Friedman (*Science and Engineering Ethics*, Vol. 1, No. 2, 1995).

Appendix B

Panel Members and Affiliations

Wayne Jonas, M.D.
Co-Chair
Director
Office of Alternative Medicine
National Institutes of Health

Kiyoshi Kuromiya
Co-Chair
Critical Path Project
Member, NIH AIDS Evaluation Working
Group
Philadelphia, Pennsylvania

Donald Abrams, M.D.
Professor of Medicine
University of California
Assistant Director, AIDS Program
San Francisco General Hospital

Ronald Baker, Ph.D.
Director
Treatment Education and Advocacy
San Francisco AIDS Foundation

Carola Burroughs
Holistic Connections
Brooklyn, New York

Misha Cohen, O.M.D., L.Ac.
Chinese Herbalist
San Francisco, California

Leonard Herzenberg, Ph.D.
Professor of Genetics
Department of Genetics
Stanford University

John James
Editor and Publisher
AIDS Treatment News
San Francisco, California

Michael Onstott
West Coast Coordinator
National AIDS Nutrient Bank
Guerneville, California

Mary Romeyn, M.D.
Private practice physician
San Francisco, California

Leanna Standish, N.D., Ph.D.
Director
AIDS Research Center
Bastyr University

OAR Staff

Mark Feinberg, M.D., Ph.D.
Co-Executive Secretary
Office of AIDS Research
National Institutes of Health

Paul Gaist, M.P.H.
Co-Executive Secretary
Office of AIDS Research
National Institutes of Health

Kim Tran
Program Assistant
Office of AIDS Research
National Institutes of Health